

Notice of Allowability

Application No.

10/716,837

Examiner

Krishnan S. Menon

Applicant(s)

APPEL ET AL.

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to amendment of 8/22/06.
2. The allowed claim(s) is/are 1 and 3-19; RENUMBERED 1-18.
3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some* c) None of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) hereto or 2) to Paper No./Mail Date ____.
(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
 Paper No./Mail Date ____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO/SB/08),
 Paper No./Mail Date ____
4. Examiner's Comment Regarding Requirement for Deposit
 of Biological Material
5. Notice of Informal Patent Application
6. Interview Summary (PTO-413),
 Paper No./Mail Date ____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other ____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ada Wong on 9/26/06.

The application has been amended as follows:

The claims were amended; amended list of claims follows on a fresh page below.

Claims 1 and 3 –19 are allowed.

The following is an examiner's statement of reasons for allowance:

Independent claims as amended now recite the hollow spindle as extending the entire length of the porous cylindrical wall, with spindle inlet disposed below the inlet and above the first outlet. This feature is not taught by the prior arts.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Listing of the Claims:

1. (Currently Amended) An apparatus for separating particulates from a fluid in a suspension, comprising:

a housing defining a frusto-conically shaped inner chamber with an inner wall, an inlet and a first outlet communicating with said chamber, and a second outlet; and

a spinning assembly with a hollow interior mounted in the chamber, said assembly being shaped to define an annular gap with the chamber inner wall, said hollow interior communicating with the second outlet, and said hollow interior communicating with said annular gap for flow of fluid materials from said gap into said interior and out of said second outlet in response to rotation of the spinning assembly, wherein said spinning assembly comprises

a hollow spindle forming a tube-like structure extending inside of said spinning assembly and defining a spindle inlet located within the spinning assembly and a spindle outlet, said spindle outlet communicating with said housing second outlet, and

a tapered, porous cylindrical wall mounted on said hollow spindle to define said hollow interior, the hollow interior communicating with said hollow spindle through said spindle inlet, wherein the hollow spindle forms a tube-like structure that extends along the entire length extending inside of the porous cylindrical wall and the spindle inlet is thereby disposed within said porous cylindrical wall and wherein the spindle inlet is disposed at a level below the inlet and above the first outlet.

2. (Cancelled).
3. (Presently Presented) The apparatus of claim 1 wherein said spinning assembly rotates at a speed of about 10,000 r.p.m.

4. (Previously Presented) The apparatus of claim 1 wherein said spinning assembly rotates at a speed between about 1,000 r.p.m. and about 50,000 r.p.m.
5. (Original) The apparatus of claim 1 wherein the annular gap is substantially constant along its length.
6. (Original) The apparatus of claim 1 wherein the annular gap is of variable thickness.
7. (Original) The apparatus of claim 1 wherein the tapered porous cylindrical wall has a pore size of between about 1 and about 200 microns.
8. (Original) The apparatus of claim 7 wherein the pore size is about 1–100 microns.
9. (Original) The apparatus of claim 7 wherein the pore size is about 50 microns.
10. (Original) The apparatus of claim 1 wherein said annular gap and said porous wall pores are sized for separating a suspension of municipal sewage sludge.
11. (Original) The apparatus of claim 1 wherein said cylindrical inner wall is tapered at an angle of from about 1° to about 10°.
12. (Previously Presented) The apparatus of claim 11 wherein the angle is between about 2° and about 2.5°.
13. (Original) The apparatus of claim 1 wherein there is a pressure differential between the inlet and the annular gap.
14. (Original) The apparatus of claim 13 wherein the pressure differential is about 3 – 4 p.s.i.

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15. (Original) The apparatus of claim 1 wherein the inlet and annular gap are configured and dimensioned for a flow rate between about 1 and about 20 gallons per minute.

16. (Original) The apparatus of claim 15 wherein the flow rate is about 10 gallons per minute.

17. (Currently Amended) An apparatus for separating particulates from a fluid in a suspension, comprising:

a casing having an inner surface;

a tapered cylinder disposed in the casing, having a longitudinal axis, an angle of taper, and having a porous wall with an outer surface configured to form an annular gap between the outer surface and the inner surface of said casing, said tapered cylinder being concentrically mounted on a hollow spindle that extends along the entire length of said cylinder wall so that said tapered cylinder it can be caused to rotate about its longitudinal axis;

an inlet for introducing the suspension into the annular gap at a flow rate;

a first outlet in the casing for permitting separated particulates to be released from the device, upon rotation of the cylinder;

a second outlet in the hollow spindle for permitting fluid that passes through the porous wall to be drained from the device, upon rotation of the cylinder; and

a pump communicating with the inlet to provide a pressure differential between the inlet and interior of the casing, wherein said hollow spindle has a spindle inlet that is disposed at a level below the inlet and above the first outlet.

18. (Previously Presented) The apparatus of claim 17, further wherein said pressure differential is between about 3-150 psi.

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19. (Previously Presented) The apparatus of claim 17, wherein said hollow spindle forms a tube-like structure extending inside said tapered cylinder and defines a hollow spindle inlet inside said tapered cylinder.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Krishnan S Menon
Examiner
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